



Sequence Listings for CHM003.ST25
SEQUENCE LISTING

<110> Whitsett, Jeffrey A

<120> USE OF FGF-18 PROTEIN, TARGET PROTEINS AND THEIR RESPECTIVE
ENCODING NUCLEOTIDE SEQUENCES TO INDUCE CARTILAGE FORMATION

<130> CHM-003

<140> 10/551,105

<141> 2004-03-26

<150> US 60/458,224

<151> 2003-03-27

<160> 2

<170> PatentIn version 3.3

<210> 1

<211> 624

<212> DNA

<213> House Mouse

<400> 1

```
atgtattcag cgccctccgc ctgcacttgc ctgtgtttac actttctact gctgtgcttc      60
caggttcagg tgttggcagc cgaggagaat gtggacttcc gcatccacgt ggagaaccag      120
acgcgggctc gagatgatgt gagtcggaag cagctgcgct tgtaccagct ctatagcagg      180
accagtggga agcacattca agttctgggc cgtaggatca gtgcccgtgg cgaggacggg      240
gacaagtatg cccagctcct agtggagaca gataccttcg ggagtcaagt ccggatcaag      300
ggcaaggaga cagaattcta cctgtgtatg aaccgaaaag gcaagctcgt ggggaagcct      360
gatggtacta gcaaggagtg cgtgttcatt gagaagggtc tggaaaacaa ctacacggcc      420
ctgatgtctg ccaagtactc tggttggtat gtgggcttca ccaagaaggg gcggcctcgc      480
aagggtccca agaccgcga gaaccagcaa gatgtacact tcatgaagcg ttacccaag      540
ggacaggccg agctgcagaa gcccttcaaa tacaccacag tcaccaagcg atcccggcgg      600
atccgccccca ctcaccccg ctag                                           624
```

<210> 2

<211> 62

<212> PRT

<213> House Mouse

<400> 2

```
Met Tyr Ser Ala Pro Ser Ala Cys Thr Cys Leu His Phe Leu Leu Leu
1          5          10          15
```

```
Cys Phe Gln Val Gln Val Leu Ala Ala Glu Glu Asn Val Asp Phe Arg
          20          25          30
```

Sequence Listings for CHM003.ST25

Ile His Val Glu Asn Gln Thr Arg Ala Arg Asp Asp Val Ser Arg Leu
35 40 45

Gln Leu Arg Leu Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys
50 55 60

Sequence Listings for CHM003.ST25
SEQUENCE LISTING

<110> whitsett, Jeffrey A

<120> USE OF FGF-18 PROTEIN, TARGET PROTEINS AND THEIR RESPECTIVE
ENCODING NUCLEOTIDE SEQUENCES TO INDUCE CARTILAGE FORMATION

<130> CHM-003

<140> 10/551,105

<141> 2004-03-26

<150> US 60/458,224

<151> 2003-03-27

<160> 14

<170> PatentIn version 3.3

<210> 1

<211> 624

<212> DNA

<213> House Mouse

<400> 1

atgtattcag cgccctccgc ctgcacttgc ctgtgtttac actttctact gctgtgcttc	60
caggttcagg tgttggcagc cgaggagaat gtggacttcc gcatccacgt ggagaaccag	120
acgcgggctc gagatgatgt gagtcggaag cagctgcgct tgtaccagct ctatagcagg	180
accagtggga agcacattca agttctgggc cgtaggatca gtgcccgtgg cgaggacggg	240
gacaagtatg cccagctcct agtggagaca gataccttcg ggagtcaagt ccggatcaag	300
ggcaaggaga cagaattcta cctgtgtatg aaccgaaaag gcaagctcgt ggggaagcct	360
gatggtacta gcaaggagtg cgtgttcatt gagaagggtc tggaaaacaa ctacacggcc	420
ctgatgtctg ccaagtactc tggttggtat gtgggcttca ccaagaaggg gcggcctcgc	480
aagggtccca agacccgcga gaaccagcaa gatgtacact tcatgaagcg ttaccccaag	540
ggacaggccg agctgcagaa gcccttcaaa tacaccacag tcaccaagcg atcccggcgg	600
atccgccccca ctcaccccgg ctag	624

<210> 2

<211> 207

<212> PRT

<213> House Mouse

<400> 2

Met	Tyr	Ser	Ala	Pro	Ser	Ala	Cys	Thr	Cys	Leu	Cys	Leu	His	Phe	Leu
1				5				10					15		

Leu	Leu	Cys	Phe	Gln	Val	Gln	Val	Leu	Ala	Ala	Glu	Glu	Asn	Val	Asp
			20					25					30		

Sequence Listings for CHM003.ST25

Phe Arg Ile His Val Glu Asn Gln Thr Arg Ala Arg Asp Asp Val Ser
35 40 45

Arg Lys Gln Leu Arg Leu Tyr Gln Leu Tyr Ser Arg Thr Ser Gly Lys
50 55 60

His Ile Gln Val Leu Gly Arg Arg Ile Ser Ala Arg Gly Glu Asp Gly
65 70 75 80

Asp Lys Tyr Ala Gln Leu Leu Val Glu Thr Asp Thr Phe Gly Ser Gln
85 90 95

Val Arg Ile Lys Gly Lys Glu Thr Glu Phe Tyr Leu Cys Met Asn Arg
100 105 110

Lys Gly Lys Leu Val Gly Lys Pro Asp Gly Thr Ser Lys Glu Cys Val
115 120 125

Phe Ile Glu Lys Val Leu Glu Asn Asn Tyr Thr Ala Leu Met Ser Ala
130 135 140

Lys Tyr Ser Gly Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro Arg
145 150 155 160

Lys Gly Pro Lys Thr Arg Glu Asn Gln Gln Asp Val His Phe Met Lys
165 170 175

Arg Tyr Pro Lys Gly Gln Ala Glu Leu Gln Lys Pro Phe Lys Tyr Thr
180 185 190

Thr Val Thr Lys Arg Ser Arg Arg Ile Arg Pro Thr His Pro Gly
195 200 205

<210> 3
<211> 1406
<212> DNA
<213> Human

<400> 3
gtgacgcttt cgcgctgcag ccgcgcgccc cgaccccgga gcgctgaccc ctggccccac 60
gcagctccgc gcccgggccc gagagcgcaa ctcggcttcc agacccgccg cgcatgctgt 120
ccccggactg agccgggcag ccagcctccc acggacgccc ggacggccgg ccggccagca 180
gtgagcgagc ttccccgcac cggccaggcg cctcctgcac agcggctgcc gccccgcagc 240
ccctgcgcca gcccggaggg cgcagcgctc gggaggagcc gcgcggggcg ctgatgccgc 300
agggcgcgcc gcggagcgcc ccggagcagc agagtctgca gcagcagcag ccggcgagga 360
gggagcagca gcagcggcgg cggcggcggc ggcggcgggc gaggcgcccg gtcccggccc 420

Sequence Listings for CHM003.ST25

```

cgcgaggcgg acatgtgcag gctgggctag gagccgccgc ctccctcccg cccagcgatg 480
tattcagcgc cctccgcctg cacttgccctg tgtttacact tcctgctgct gtgcttccag 540
gtacaggtgc tggttgccga ggagaacgtg gacttccgca tccacgtgga gaaccagacg 600
cgggctcggg acgatgtgag ccgtaagcag ctgcggtgt accagctcta cagccggacc 660
agtgggaaac acatccaggt cctgggccgc aggatcagtg cccgcggcga ggatggggac 720
aagtatgccc agctcctagt ggagacagac accttcggta gtcaagtccg gatcaagggc 780
aaggagacgg aattctacct gtgcatgaac cgcaaaggca agctcgtggg gaagcccgat 840
ggcaccagca aggagtgtgt gttcatcgag aaggttcttg agaacaacta cacggccctg 900
atgtcggcta agtactccgg ctggtacgtg ggcttcacca agaaggggcg gccgcggaag 960
ggccccaaga cccgggagaa ccagcaggac gtgcatttca tgaagcgcta cccaagggg 1020
cagccggagc ttcagaagcc cttcaagtac acgacggtga ccaagaggtc ccgtcggatc 1080
cggcccacac accctgccta ggccaccccg ccgcggccct caggtcgccc tggccacact 1140
cacactccca gaaaactgca tcagaggaat atttttacat gaaaaataag gattttattg 1200
ttgacttgaa acccccgatg acaaaagact cacgcaaagg gactgtagtc aaccacagg 1260
tgcttgtctc tctctaggaa cagacaactc taaactcgtc cccagaggag gacttgaatg 1320
aggaaaccaa cactttgaga aaccaaagtc ctttttccca aaggttctga aaggaaaaaa 1380
aaaaaaaaa aaaaaaaaaa aaaaaa 1406

```

<210> 4
 <211> 208
 <212> PRT
 <213> Human

<400> 4

Met Met Tyr Ser Ala Pro Ser Ala Cys Thr Cys Leu Cys Leu His Phe
 1 5 10 15

Leu Leu Leu Cys Phe Gln Val Gln Val Leu Val Ala Glu Glu Asn Val
 20 25 30

Asp Phe Arg Ile His Val Glu Asn Gln Thr Arg Ala Arg Asp Asp Val
 35 40 45

Ser Arg Lys Gln Leu Arg Leu Tyr Gln Leu Tyr Ser Arg Thr Ser Gly
 50 55 60

Lys His Ile Gln Val Leu Gly Arg Arg Ile Ser Ala Arg Gly Glu Asp
 65 70 75 80

Sequence Listings for CHM003.ST25

Gly Asp Lys Tyr Ala Gln Leu Leu Val Glu Thr Asp Thr Phe Gly Ser
85 90 95

Gln Val Arg Ile Lys Gly Lys Glu Thr Glu Phe Tyr Leu Cys Met Asn
100 105 110

Arg Lys Gly Lys Leu Val Gly Lys Pro Asp Gly Thr Ser Lys Glu Cys
115 120 125

Val Phe Ile Glu Lys Val Leu Glu Asn Asn Tyr Thr Ala Leu Met Ser
130 135 140

Ala Lys Tyr Ser Gly Trp Tyr Val Gly Phe Thr Lys Lys Gly Arg Pro
145 150 155 160

Arg Lys Gly Pro Lys Thr Arg Glu Asn Gln Gln Asp Val His Phe Met
165 170 175

Lys Arg Tyr Pro Lys Gly Gln Pro Glu Leu Gln Lys Pro Phe Lys Tyr
180 185 190

Thr Thr Val Thr Lys Arg Ser Arg Arg Ile Arg Pro Thr His Pro Ala
195 200 205

<210> 5
<211> 2716
<212> DNA
<213> House Mouse

<400> 5
ccttgctacc atttaaaatc aggctctttt tgtcttttaa ttgctgtctc gagacccaac 60
tccgatgtgt tccgttacca gcgaccggca gcctgccatc gcagccccag tctgggtggg 120
gatcggagac aagtcccctg cagcagcggc aggcaagggtt atataggaag agaaagagcc 180
aggcagcgcc agaggggaacg aacgagccga gcgaggaagg gagagccgag cgcaaggagg 240
agcgcacacg cacacacccg cgcgtacccg ctcgcgacac gacagcgcgg ggacagctca 300
caagtcctca ggttccgcgg acgagatgct gctgctgctg gccagatggt ttctggtgat 360
ccttgcttcc tcgctgctgg tgtgccccgg gctggcctgt gggccccggca ggggggtttgg 420
aaagaggcgg caccaccaaa agctgacccc tttagcctac aagcagttta ttcccaacgt 480
agccgagaag accctagggg ccagcggcag atatgaaggg aagatcacia gaaactccga 540
acgatttaag gaactcacc ccaattacaa ccccgacatc atatttaagg atgaggaaaa 600
cacgggagca gaccggctga tgactcagag gtgcaaagac aagttaaagt ccttgggcat 660
ctctgtgatg aaccagtggc ctggagtga gctgagagt accgagggtt gggatgagga 720
cggccatcat tcagaggagt ctctacacta tgagggtcga gcagtggaca tcaccacgtc 780

Sequence Listings for CHM003.ST25

cgaccgggac cgcagcaagt acggcatgct ggctcgctg gctgtggaag caggtttcga	840
ctgggtctac tatgaatcca aagctcacat ccactgttct gtgaaagcag agaactccgt	900
ggcggccaaa tccggcggct gtttcccggg atccgccacc gtgcacctgg agcagggcgg	960
caccaagctg gtgaaggact tacgtcccgg agaccgcgtg ctggcggctg acgaccaggg	1020
ccggctgctg tacagcgact tcctcacctt cctggaccgc gacgaaggcg ccaagaaggt	1080
cttctacgtg atcgagacgc tggagccgcg cgagcgctg ctgctcaccg ccgcgcacct	1140
gctcttcgtg gcgccgcaca acgactcggg gcccacgccc gggccaagcg cgctctttgc	1200
cagccgcgtg cgccccgggc agcgcgtgta cgtggtggct gaacgcggcg gggaccgccg	1260
gctgctgccc gccgcggtgc acagcgtgac gctgcgagag gaggaggcgg gcgcgtacgc	1320
gccgctcacg gcgcacggca ccattctcat caaccgggtg ctgcctcgt gctacgctgt	1380
catcgaggag cacagctggg cacaccgggc cttcgcgcct ttccgcctgg cgcacgcgt	1440
gctggccgcg ctggcacccg cccgcacgga cggcgggggc gggggcagca tccctgcagc	1500
gcaatctgca acggaagcga ggggcgcgga gccgactgcg ggcattccact ggtactcgca	1560
gctgctctac cacattggca cctggctgtt ggacagcgag accatgcatc ccttgggaat	1620
ggcggtaag tccagctgaa gcccgacggg accgggcaag gggcgggcgg ggcggggagc	1680
gactgcgaaa taaggaactg atgggaaagc gcacggaagg agacttttaa ttataagaat	1740
aattcataat aataataata atgataataa taataataat aagtagggca gtccaaagta	1800
gactataagg aagcaaaaac cccggggagt tctgttggtta tgtttagttt atatattttt	1860
ttttgaaatt tttcgttatt gtcttatatg ggttggtttt ctctctcct ggctatttat	1920
ttgtttcgta tgaatagatg ttttaaaaat atgaacggac cttcaagagc cttactagt	1980
ttgtgtcttg gataatttat tattgtgtga actgtactca cagtgaggga aagattattt	2040
tgtgaggcca agcaacctgc tgaaagtcta tttttctaca tgtcccttgt cctgcgtttc	2100
agaaggcaaa cctccgcatt cctctcctgc tatgctcctg ctttcccgca agtgtaaact	2160
aaaacctgct ccatgggggt ccacaaatta tatttttata cacagaattg taaattagat	2220
ttttgagaga tcaataccta actgaatgac atttcatttt ttgaaagtgt aaaatatgaa	2280
aatatattat ttttaatttaa ctattttcca atgtaatagc cgtcttctgt actgccttct	2340
tggtttgtat ttgctttgta accgccactt tgtcatgttc ttggaaacca agactgttaa	2400
cgcacacata tacacttttt tttttgacag actggaagaa ctctgttatt ttttaacttca	2460
aagaatttat tagaaaataa tattttttta aagtgcacct agcagcgagc ccacgaggat	2520
ggagcctgta gtttgtacag agaaaaacaa ggatgttttt gcattaataa actgagaagt	2580
aactgctgta aatttactaa aatgtatttt tgaatatatt gtaatagttt tatagaaata	2640

Sequence Listings for CHM003.ST25

aagcgtgccca cacacaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2700

aaaaaaaaaa aaaaaa 2716

<210> 6
<211> 437
<212> PRT
<213> House Mouse

<400> 6

Met Leu Leu Leu Leu Ala Arg Cys Phe Leu Val Ile Leu Ala Ser Ser
1 5 10 15

Leu Leu Val Cys Pro Gly Leu Ala Cys Gly Pro Gly Arg Gly Phe Gly
20 25 30

Lys Arg Arg His Pro Lys Lys Leu Thr Pro Leu Ala Tyr Leu Gln Phe
35 40 45

Ile Pro Asn Val Ala Glu Lys Thr Leu Gly Ala Ser Gly Arg Tyr Glu
50 55 60

Gly Lys Ile Thr Arg Asn Ser Glu Arg Phe Lys Glu Leu Thr Pro Asn
65 70 75 80

Tyr Asn Pro Asp Ile Ile Phe Lys Asp Glu Glu Asn Thr Gly Ala Asp
85 90 95

Arg Leu Met Thr Gln Arg Cys Lys Asp Lys Leu Asn Ala Leu Ala Ile
100 105 110

Ser Val Met Asn Gln Trp Pro Gly Val Lys Leu Arg Val Thr Glu Gly
115 120 125

Trp Asp Glu Asp Gly His His Ser Glu Glu Ser Leu His Tyr Glu Gly
130 135 140

Arg Ala Val Asp Ile Thr Thr Ser Asp Arg Asp Arg Ser Lys Tyr Gly
145 150 155 160

Met Leu Ala Arg Leu Ala Val Glu Ala Gly Phe Asp Trp Val Tyr Tyr
165 170 175

Gly Ser Lys Ala His Ile His Cys Ser Val Lys Ala Glu Asn Ser Val
180 185 190

Ala Ala Lys Ser Gly Gly Cys Phe Pro Gly Ser Ala Thr Val His Leu
195 200 205

Sequence Listings for CHM003.ST25

Glu Gln Gly Gly Thr Lys Leu Val Lys Asp Leu Arg Pro Gly Asp Arg
 210 215 220
 Val Leu Ala Ala Asp Asp Gln Gly Arg Leu Leu Tyr Ser Asp Phe Leu
 225 230 235 240
 Thr Phe Leu Asp Arg Asp Glu Gly Ala Lys Lys Val Phe Tyr Val Ile
 245 250 255
 Gly Thr Leu Glu Pro Arg Glu Pro Leu Leu Leu Thr Ala Ala His Leu
 260 265 270
 Leu Phe Val Ala Pro His Asn Asp Ser Gly Pro Thr Pro Gly Pro Ser
 275 280 285
 Ala Leu Phe Ala Ser Arg Val Arg Pro Gly Gln Arg Val Tyr Val Val
 290 295 300
 Ala Glu Arg Gly Gly Asp Arg Arg Leu Leu Pro Ala Ala Val His Ser
 305 310 315 320
 Val Thr Leu Arg Glu Glu Glu Ala Gly Ala Tyr Ala Pro Leu Thr Ala
 325 330 335
 His Gly Thr Ile Leu Ile Asn Arg Val Leu Ala Ser Cys Tyr Ala Val
 340 345 350
 Ile Glu Glu His Ser Trp Ala His Arg Ala Phe Ala Pro Phe Arg Leu
 355 360 365
 Ala His Ala Leu Leu Ala Ala Leu Ala Pro Ala Arg Thr Asp Gly Gly
 370 375 380
 Gly Gly Gly Ser Ile Pro Ala Ala Gln Ser Ala Thr Glu Ala Arg Gly
 385 390 395 400
 Ala Glu Pro Thr Ala Gly Ile His Trp Tyr Ser Gln Leu Leu Tyr His
 405 410 415
 Ile Gly Thr Trp Leu Leu Asp Ser Glu Thr Met His Pro Leu Gly Met
 420 425 430
 Ala Val Lys Ser Ser
 435

<210> 7
 <211> 3565

Sequence Listings for CHM003.ST25

<212> DNA
<213> House Mouse

<400> 7
gcgggcggccat cttaagccct cgctcggtgg cggccgcgtc agctcgtgtc ctgtgaagcc 60
cgcgggcccgg ggaggcggag acggagcacg gtgggcccgg agccgtcagt gcaggaggcc 120
gaggccgagc gggcggccgc gaggtagcag cgcgcgggcc tgagggtacc tgaagctcag 180
cgcacagctg ctgtgacacc gctgcgtgga caatggctac tcaagctgac ctgatggagt 240
tggacatggc catggagccg gacagaaaag ctgctgtcag ccaactggcag cagcagtctt 300
acttgattc tggaatccat tctgggtgcca ccaccacagc tccttccttg agtggcaagg 360
gcaaccctga ggaagaagat gttgacacct cccaagtcct ttatgaatgg gagcaaggct 420
tttcccagtc cttcacgcaa gagcaagtag ctgatattga cgggcagtat gcaatgacta 480
gggctcagag ggtccgagct gccatgttcc ctgagacgct agatgagggc atgcagatcc 540
catccacgca gtttgacgct gctcatccca ctaatgtcca gcgcttggt gaaccatcac 600
agatgttgaa acatgcagtt gtcaatttga ttaactatca ggatgacgcg gaacttgcca 660
cacgtgcaat tcctgagctg acaaaactgc taaacgatga ggaccagggt gtagttaata 720
aagctgctgt tatgggtccat cagctttcca aaaaggaagc ttccagacat gccatcatgc 780
gctcccctca gatgggtgtct gccattgtac gcaccatgca gaatacaaat gatgtagaga 840
cagctcgttg tactgctggg actctgcaca acctttctca ccaccgagc ggcttgctgg 900
ccatctttaa gtctgggtggc atcccagcgc tggtgaaaat gcttggggtca ccagtggatt 960
ctgtactgtt ctacgccatc acgacactgc ataatctcct gctccatcag gaaggagcta 1020
aaatggcagt gcgcctagct ggtggactgc agaaaatggg tgctttgctc aacaaaacaa 1080
acgtgaaatt cttggctatt acaacagact gccttcagat cttagcttat ggcaatcaag 1140
agagcaagct catcattctg gccagtgggt gacccaagc cttagtaaac ataatgagga 1200
cctacactta tgagaagctt ctgtggacca caagcagagt gctgaagggt ctgtctgtct 1260
gctctagcaa caagccggcc attgtagaag ctgggtgggat gcaggcactg gggcttcac 1320
tgacagaccc aagtcagcga cttgttcaaa actgtctttg gactctcaga aacctttcag 1380
atgcagcgc taagcaggaa gggatggaag gcctccttgg gactctagt cagcttctgg 1440
gttccgatga tataaatgtg gtcacctgtg cagctggaat tctctctaac ctcaactgca 1500
ataattacaa aaacaagatg atgggtgtgcc aagtgggtgg catagaggct cttgtacgca 1560
ccgtccttcg tgctgggtgac aggggaagaca tcaactgagc tgccatctgt gctcttcgtc 1620
atctgaccag ccggcatcag gaagccgaga tggcccagaa tgccgttcgc cttcattatg 1680
gactgcctgt tgtgggttaaa ctctgcacc caccatccca ctggcctctg ataaaggcaa 1740
ctgttgatt gattcgaaac cttgcccttt gccagcaaa tcatgcgcct ttgcgggaac 1800

Sequence Listings for CHM003.ST25

agggtgctat tccacgacta gttcagctgc ttgtacgagc acatcaggac acccaacggc	1860
gcacctccat ggggtggaacg cagcagcagt ttgtggaggg cgtgcgcatg gaggagatag	1920
tagaaggggtg tactggagct ctccacatcc ttgctcggga cgttcacaac cggattgtaa	1980
tccgaggact caataccatt ccattgtttg tgcagttgct ttattctccc attgaaaata	2040
tccaaagagt agctgcaggg gtcctctgtg aacttgctca ggacaaggag gctgcagagg	2100
ccattgaagc tgagggagcc acagctcccc tgacagagtt actccactcc aggaatgaag	2160
gcgtggcaac atacgcagct gctgtcctat tccgaatgtc tgaggacaag ccacaggatt	2220
acaagaagcg gctttcagtc gagctgacca gttccctctt caggacagag ccaatggctt	2280
ggaatgagac tgcagatctt ggactggaca ttggtgcca gggagaagcc cttggatatc	2340
gccaggatga tcccagctac cgttcttttc actctggtgg atacggccag gatgccttgg	2400
ggatggaccc tatgatggag catgagatgg gtggccacca ccctggtgct gactatccag	2460
ttgatgggct gcctgatctg ggacacgccc aggacctcat ggatgggctg cccccaggtg	2520
atagcaatca gctggcctgg ttgatactg acctgtaaat cgtccttttag gtaagaaagc	2580
ttataaaagc cagtgtgggt gaatacttta ctctgcctgc agaactccag aaagacttgg	2640
taggggtggga atggtttttag gcctgtttgt aaatctgcca ccaaacagat acataccttg	2700
gaaggagatg ttcattgtgtg gaagtttctc acgttgatgt ttttgccaca gcttttgcag	2760
cgttatactc agatgagtaa catttgctgt tttcaacatt aatagcagcc tttctctcta	2820
tacagctgta gtgtctgaac gtgcattgtg attggcctgt agagttgctg agagggctcg	2880
aggggtgggc tggatatctca gaaagtgcct gacacactaa ccaagctgag tttcctatgg	2940
gaacagtcga agtacgcttt ttgttctggt cttttttggt cgaggagtaa caatacaaat	3000
ggatttgggg agtgactcac gcagtgaaga atgcacacga atggatcaca agatggcggt	3060
atcaaaccct agccttgctt gttctttggt ttaatatctg tagtggtgct gactttgctt	3120
gcttttatatt tttgcagtaa ctgttagttt ttaagtagtg ttatgttcta gtgaacctgc	3180
tacagcaatt tctgatttct aagaaccgag taatggtgta gaacactaat tcataatcac	3240
gctaattgta atctggagac gtgtaacatt gtgtagcctt ttgtataaat agacagatag	3300
aaatggtccg attagtttcc tttttaatat gcttaaaata agcaggtgga tctatttcat	3360
gtttttgaac aaaaacttta tcggggatac gtgcggtagg gttaatcagt aagagggtgtt	3420
atttgagcct tgtttttgac agtataccag ttgcctttta tcccaaagtt gttgtaacct	3480
gctgtgatac aatgcttcaa cagatgcggt tatagaaatg gttcagaatt aaacttttaa	3540
ttcattcaaa aaaaaaaaaa aaaaa	3565

Sequence Listings for CHM003.ST25

<211> 781
<212> PRT
<213> House Mouse

<400> 8

Met Ala Thr Gln Ala Asp Leu Met Glu Leu Asp Met Ala Met Glu Pro
1 5 10 15

Asp Arg Lys Ala Ala Val Ser His Trp Gln Gln Gln Ser Tyr Leu Asp
20 25 30

Ser Gly Ile His Ser Gly Ala Thr Thr Thr Ala Pro Ser Leu Ser Gly
35 40 45

Lys Gly Asn Pro Glu Glu Glu Asp Val Asp Thr Ser Gln Val Leu Tyr
50 55 60

Glu Trp Glu Gln Gly Phe Ser Gln Ser Phe Thr Gln Gln Gln Val Ala
65 70 75 80

Asp Ile Asp Gly Gln Tyr Ala Met Thr Arg Ala Gln Arg Val Arg Ala
85 90 95

Ala Met Phe Pro Glu Thr Leu Asp Glu Gly Met Gln Ile Pro Ser Thr
100 105 110

Gln Phe Asp Ala Ala His Pro Thr Asn Val Gln Arg Leu Ala Glu Pro
115 120 125

Ser Gln Met Leu Lys His Ala Val Val Asp Leu Ile Asp Tyr Gln Asp
130 135 140

Asp Ala Glu Leu Ala Thr Arg Ala Ile Pro Glu Leu Thr Lys Leu Leu
145 150 155 160

Asn Asp Glu Asp Gln Val Val Val Asn Lys Ala Ala Val Met Val His
165 170 175

Gln Leu Ser Lys Lys Glu Ala Ser Arg His Ala Ile Met Arg Ser Pro
180 185 190

Gln Met Val Ser Ala Ile Val Arg Thr Met Gln Asn Thr Asn Asp Val
195 200 205

Glu Thr Ala Arg Cys Thr Ala Gly Thr Leu His Asn Leu Ser His His
210 215 220

Arg Glu Gly Leu Leu Ala Ile Phe Lys Ser Gly Gly Ile Pro Ala Leu
Page 10

Sequence Listings for CHM003.ST25

225		230		235		240
Val	Lys	Met	Leu	Gly	Ser	Pro
			245			
				Ser	Val	Leu
				250		
					Phe	Tyr
					Ala	Ile
					255	
Thr	Thr	Leu	His	Asn	Leu	Leu
			260			
				His	Gln	Glu
				265		
					Gly	Ala
					Lys	Met
					270	
Val	Arg	Leu	Ala	Gly	Gly	Leu
				Gln	Lys	Met
				280		
					Val	Ala
					Leu	Leu
					285	
					Asn	Lys
Thr	Asn	Val	Lys	Phe	Leu	Ala
					Ile	Thr
					290	
					Thr	Thr
					Asp	Cys
					300	
					Leu	Gln
					Ile	Leu
Ala	Tyr	Gly	Asn	Gln	Glu	Ser
					Lys	Leu
					310	
					Ile	Ile
					315	
					Leu	Ala
					Ser	Gly
						320
Pro	Gln	Ala	Leu	Val	Asn	Ile
					Met	Arg
					325	
					Thr	Tyr
					330	
					Thr	Tyr
					Glu	Lys
					335	
					Leu	
Leu	Trp	Thr	Thr	Ser	Arg	Val
					Leu	Lys
					340	
					Val	Leu
					345	
					Ser	Val
					350	
					Cys	Ser
						Ser
Lys	Asn	Pro	Ala	Ile	Val	Glu
					Ala	Gly
					355	
					Gly	Gly
					360	
					Met	Gln
					365	
					Ala	Leu
					Gly	Leu
His	Leu	Thr	Asp	Pro	Ser	Gln
					Arg	Ser
					370	
					Val	Gln
					375	
					Asn	Cys
					380	
					Leu	Trp
					Thr	
Leu	Arg	Asn	Ser	Leu	Asp	Ala
					Ala	Thr
					385	
					Lys	Gln
					390	
					Glu	Gly
					395	
					Met	Glu
					400	
Leu	Leu	Gly	Thr	Leu	Val	Gln
					Leu	Leu
					405	
					Gly	Ser
					410	
					Asp	Asp
					Ile	Asn
					415	
					Val	
Val	Thr	Cys	Ala	Ala	Gly	Ile
					Leu	Ser
					420	
					Asn	Leu
					425	
					Thr	Cys
					430	
					Asn	Asn
					Tyr	
Lys	Asn	Lys	Met	Met	Val	Cys
					Gln	Val
					435	
					Gly	Gly
					440	
					Ile	Glu
					445	
					Ala	Leu
					Val	
Arg	Thr	Val	Leu	Arg	Ala	Gly
					Asp	Arg
					450	
					Glu	Asp
					455	
					Glu	Thr
					460	
					Glu	Pro
					Ala	
Ile	Cys	Ala	Leu	Arg	His	Leu
					Thr	Ser
					465	
					Arg	His
					470	
					Gln	Glu
					475	
					Ala	Glu
					480	
					Met	

Sequence Listings for CHM003.ST25

Ala Gln Asn Ala Val Arg Leu His Tyr Gly Leu Pro Val Val Val Lys
485 490 495

Leu Leu His Pro Pro Ser His Trp Pro Leu Ile Lys Ala Thr Val Gly
500 505 510

Leu Ile Arg Asn Leu Ala Leu Cys Pro Ala Asn His Ala Pro Leu Arg
515 520 525

Glu Gln Gly Ala Ile Pro Arg Leu Val Gln Leu Leu Val Arg Ala His
530 535 540

Gln Asp Thr Gln Arg Arg Thr Ser Met Gly Gly Thr Gln Gln Gln Phe
545 550 555 560

Val Glu Gly Val Arg Met Glu Glu Ile Val Glu Gly Cys Thr Gly Ala
565 570 575

Leu His Ile Leu Ala Arg Asp Val His Asn Arg Ile Val Ile Arg Gly
580 585 590

Leu Asn Thr Ile Pro Leu Phe Val Gln Leu Leu Tyr Ser Pro Ile Glu
595 600 605

Asn Ile Gln Arg Val Ala Ala Gly Val Leu Cys Glu Leu Ala Gln Asp
610 615 620

Lys Glu Ala Ala Glu Ala Ile Glu Ala Glu Gly Ala Thr Ala Pro Leu
625 630 635 640

Thr Glu Leu Leu His Ser Arg Asn Glu Gly Val Ala Thr Tyr Ala Ala
645 650 655

Ala Val Leu Phe Arg Met Ser Glu Asp Lys Pro Gln Asp Tyr Lys Lys
660 665 670

Arg Leu Ser Val Glu Leu Thr Ser Ser Leu Phe Arg Thr Glu Pro Met
675 680 685

Ala Trp Asn Glu Thr Ala Asp Leu Gly Leu Asp Ile Gly Ala Gln Gly
690 695 700

Glu Ala Leu Gly Tyr Arg Gln Asp Asp Pro Ser Tyr Arg Ser Phe His
705 710 715 720

Ser Gly Gly Tyr Gly Gln Asp Ala Leu Gly Met Asp Pro Met Met Glu
725 730 735

Sequence Listings for CHM003.ST25

His Glu Met Gly Gly His His Pro Gly Ala Asp Tyr Pro Val Asp Gly
740 745 750

Leu Pro Asp Leu Gly His Ala Gln Asp Leu Met Asp Gly Leu Pro Pro
755 760 765

Gly Asp Ser Asn Gln Leu Ala Trp Phe Asp Thr Asp Leu
770 775 780

<210> 9
<211> 3971
<212> DNA
<213> House Mouse

<400> 9
tttgctcaga ccggcaagag ccacagcttc gctcgccact cattgtctgt ggccctgacc 60
agtgcgccct ggtgctttta gtgccgcccg ggcccggagg ggcagcctct tctcactgca 120
gtcagcgccg caactataag aggcctataa gaggcggtgc ctcccgcagt ggctgcttca 180
gcccagcagc caggacagcg aaccatgctg cctgcggccc gcctccagac ttattagagc 240
cagcctggga actcgcatca ctgccctcac cgctgtgtcc agtcccaccg tcgcggacag 300
caaccacagt cgtcagaacc gcagcacaga accagcaagg ccaggcaggc catggggctc 360
tgggcgctgc tgcccagctg ggtttctact acgttgctac tggcactgac cgctctgccc 420
gcagccctgg ctgccaacag tagtggccga tgggtggttaag tgagctagta cgggggtccgc 480
cacttgtcct ggggcaaaga gccaggcacg ggccttacc agctcccacg ctgtggggat 540
caccaacctta cagaccccc tcgtgcattg tgacttcaca tccagggtgc tcacacctag 600
aactagctct gctgaagtgg ggcacatcat tggcatgcag aagcccagat acaccaggct 660
cagagacat tccatttaa tacgaccccg tttctgctga gcaacaggtc ccaacctcgc 720
tgtggtgggt gctcaggtgt cccttaggtc ttgaaccaa aaaaaaaaaa aaaaaaaaaa 780
aaaaccagat attagctttg aggtgaggga gtggaattcc taagtttttc aaggtgggca 840
aggctgcagg tggggtttct cctcgggggc tgacttgaag aaaggaagag ctaaggtagc 900
catgcctttt ctgtccactc actagactct ggagctcagg gccaggcaag gatagggtgg 960
tacagcctgt atggttagga tgcaggtccc ctcccctgga ctgaaccctt atgcatcccg 1020
ccaggggcat cgtgaacata gcctcctcca cgaacctgtt gacggattcc aagagtctgc 1080
agctggtgct cgagcccagt ctgcagctgc tgagccgcaa gcagcggcga ctgatccgac 1140
agaacccggg gatcctgcac agcgtgagtg gagggctcca gagcgctgtg cgagagtgca 1200
aatggcaatt ccgaaaccgc cgctggaact gcccactgc tccggggccc cacctcttcg 1260
gcaagatcgt caaccgaggt ggggtgcccag gaaagcgacg cttccgggat taaggga aaa 1320

Sequence Listings for CHM003.ST25

gcaggggtcat ctccagggca taggcgggcg aaggcagggga agacatccca gggttatatg	1380
tgatcaaact gagaatcgcc tgggtgccggc agttaccgta ggtcagcacc agattctttc	1440
tagccttgcg ttgtgagcat gatctttaac gttgctggcc actggcccac agaaagggaa	1500
ttccggatcg tgggcgctgg gcgacagctg tttttcccta gccttcctca aaggtagctg	1560
ggaagctgat ctctgagggc tagctagggg tgtgcttcgc acccagcaaa gtttgactg	1620
ccaatactag tagcgatctt ggctatgcag atttgttcta cttgggaatc tccccttgga	1680
gctgctctgc tagggctctg gagtctcagt aaagcttaga gaggagggca ttccatgctt	1740
cgcacacatg actccaagga tgttgactg tagggtagca agtcttccaa acagggtagct	1800
gagttggccc cagccttct ctcaactgat gcggggctgc ttcaccaca ggctgccgag	1860
aaacagcgtt catcttcgca atcacctccg ccgggggtcac acattccgtg gcgcgctcct	1920
gctccgaagg ctccatcgag tcctgcacct gcgactaccg gcggcgcggc cctgggggcc	1980
ccgactggca ctgggggggc tgcagtgaca acatcgattt tggtcgcctc tttggccgag	2040
agttcgtgga ctccgggggag aaggggaggg acctacgctt cctcatgaac cttcacaaca	2100
acgaggcagg gcgaacggtg cgtcgggtgtg tccggaacca atggcagggg agatgtaaga	2160
caggtgcacg gggacagagg cacagggagg ggcttcccga gagagtggga ctctaggagg	2220
gaagacagag aagaggtggt ggttgagggc aaagaggttc ctgagctgat gacagaacag	2280
aagagattag caggctatca acacgtggga tgtattgaga tggctccatg gcacactttt	2340
gaaagataaa agtgacttgc tggcgtggag cagagtctgg ccgaatgtcc ctatctcagc	2400
gggccatttt gcacttcctc tctcccagac ttagtcacac ctggaccttg gctgaagttt	2460
ccacagcatc gacgtgacct ggggtggggg ggggtgggga agtatgggtg gtggttcgtg	2520
ggatgttggc tttgaccttt tcttccctcc tcccctcgtc cctcctccc ccagaccgtg	2580
ttctctgaga tgcgccaaga gtgcaaatgc cacgggatgt ccggctcctg cacggtgcgc	2640
acgtgttggg tgcggctgcc cacgctgcgc gctgtgggag acgtgctgcg cgaccgcttc	2700
gacggcgcct cccgcgtcct ttacggcaac cgaggcagca accgcgcctc gcgggcggag	2760
ctgctgcgcc tggagcccga agaccccgcg cacaagcctc cctcccctca cgacctcgtc	2820
tacttcgaga aatcgcccaa cttctgcacg tacagtggcc gcctgggcac agctggcaca	2880
gctggacgag cttgcaacag ctctgtctccc gcgctggacg gctgtgagct gctgtgctgt	2940
ggccgaggcc accgcacgcg cacgcagcgc gtcacggagc gctgcaactg caccttccac	3000
tgggtgctgcc acgtcagctg ccgcaactgc acgcacacgc gcgttctgca cgagtgtcta	3060
tgaggtgccg cgcctccggg aacgggaacg ctctcttcca gttctcagac aactcgtg	3120
gtcctgatgt ttgcccaccc taccgcgtcc agccacagtc ccagggttca tagcgatcca	3180
tctctcccac ctctacctg gggactcctg aaaccacttg cctgagtcgg ctcgaaccct	3240

Sequence Listings for CHM003.ST25

```

tttgccatcc tgagggccct gaccagcct acctccctcc ctctttgagg gagactcctt 3300
ttgcactgcc cccaatttg gccagagggg gagagaaaga ttcttcttct ggggtggggg 3360
tgaggaggtc aactcttgaa ggtgttgagg ttcttgatgt attttgcgct gtgacctctt 3420
tggtatttat cacctttcct tgtctctcgg gtccctatag gtcccttgag ttctctaacc 3480
agcacctctg ggcttcaagg cttttcccct cccacctgta gctgaagagt ttccgagttg 3540
aaagggcacg gaaagctaag tgggaaagga ggttgctgga cccagcagca aaaccctaca 3600
ttctccttgt ctctgcctcg gagccattga acagctgtga accatgcctc cctcagcctc 3660
ctcccacccc ttctgtcct gcctcctcat cactgtgtaa ataatttgca ccgaaatgtg 3720
gccgcagagc cacgcgttcg gttatgtaaa taaaactatt tattgtgctg ggttccagcc 3780
tggttgtagc agaccaccct caccacacct cactgctcct ctgttctgct cgccagtcct 3840
tttgttatcc gacctttttt ctcttttacc cagcttctca taggcgcctt tgcccaccgg 3900
atcagtattt ccttccactg tagctattag tggctcctcg ccccccacaa tgtagtatct 3960
tcctctgagg a 3971

```

```

<210> 10
<211> 370
<212> PRT
<213> House Mouse

```

```

<400> 10

```

```

Met Gly Leu Trp Ala Leu Leu Pro Ser Trp Val Ser Thr Thr Leu Leu
1          5          10          15

```

```

Leu Ala Leu Thr Ala Leu Pro Ala Ala Leu Ala Ala Asn Ser Ser Gly
20          25          30

```

```

Arg Trp Trp Gly Ile Val Asn Ile Ala Ser Ser Thr Asn Leu Leu Thr
35          40          45

```

```

Asp Ser Lys Ser Leu Gln Leu Val Leu Glu Pro Ser Leu Gln Leu Leu
50          55          60

```

```

Ser Arg Lys Gln Arg Arg Leu Ile Arg Gln Asn Pro Gly Ile Leu His
65          70          75          80

```

```

Ser Val Ser Gly Gly Leu Gln Ser Ala Val Arg Glu Cys Lys Trp Gln
85          90          95

```

```

Phe Arg Asn Arg Arg Trp Asn Cys Pro Thr Ala Pro Gly Pro His Leu
100          105          110

```

Sequence Listings for CHM003.ST25

Phe Gly Lys Ile Val Asn Arg Gly Cys Arg Glu Thr Ala Phe Ile Phe
115 120 125

Ala Ile Thr Ser Ala Gly Val Thr His Ser Val Ala Arg Ser Cys Ser
130 135 140

Ala Gly Ser Ile Glu Ser Cys Thr Cys Asp Tyr Arg Arg Arg Gly Pro
145 150 155 160

Gly Gly Pro Asp Trp His Trp Gly Gly Cys Ser Asp Asn Ile Asp Phe
165 170 175

Gly Arg Leu Phe Gly Arg Glu Phe Val Asp Ser Gly Glu Lys Gly Arg
180 185 190

Asp Leu Arg Phe Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Thr
195 200 205

Thr Val Phe Ser Glu Met Arg Gln Glu Cys Lys Cys His Gly Met Ser
210 215 220

Gly Ser Cys Thr Val Arg Thr Cys Trp Met Arg Leu Pro Thr Leu Arg
225 230 235 240

Ala Val Gly Asp Val Leu Arg Asp Arg Phe Asp Gly Ala Ser Arg Val
245 250 255

Leu Tyr Gly Asn Arg Gly Ser Asn Arg Ala Ser Arg Ala Glu Leu Leu
260 265 270

Arg Leu Glu Pro Glu Asp Pro Ala His Lys Pro Pro Ser Pro His Asp
275 280 285

Leu Val Tyr Phe Glu Lys Ser Pro Asn Phe Cys Thr Tyr Ser Gly Arg
290 295 300

Leu Gly Thr Ala Gly Thr Ala Gly Arg Ala Cys Asn Ser Ser Ser Pro
305 310 315 320

Ala Leu Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly His Arg Thr
325 330 335

Arg Thr Gln Arg Val Thr Glu Arg Cys Asn Cys Thr Phe His Trp Cys
340 345 350

Cys His Val Ser Cys Arg Asn Cys Thr His Thr Arg Val Leu His Glu
355 360 365

Sequence Listings for CHM003.ST25

Cys Leu
370

<210> 11
<211> 1669
<212> DNA
<213> House Mouse

<400> 11
ccgccgcgcc ctcctcgccc gggatgggcc ccccgccgc caccgccgcc ggagccctag 60
tctccgggcc gccgcctcgg tcgccgcgtt tgccctgaag cccggtgccc gcgcgccccg 120
gctcaccgag cagcttcact cccaccccc agccgcctcc ccggccagac tgcggtagag 180
ctctcaggat gctgccgccc gtgccctccc gcctcggact gctgctgctg ctcttgtgcc 240
ccgcgcacgt cgatggactg tgggtgggccg tgggcagccc cttggtcatg gatcctacca 300
gcatctgcag gaaggccagg cggctggcag gaagacaggc cgagctgtgc caggcggagc 360
cggaagtagt ggcagagctt gcccagaggc caagactggg ggttcgagaa tgtcagttcc 420
agttccgttt ccgacgctgg aactgctcca gccacagcaa ggcctttggg cgcgtcctgc 480
agcaggacat ccgagagaca gctttcgtgt ttgcaatcac cgcagctggt gccagccacg 540
cggtcactca agcctgttcc atgggagagc tcctacagtg tggttgtcag gcaccccgcg 600
ggcgggcacc gcctaggccc tccggccttc tgggcactcc tggacctcca ggaccaactg 660
gctctccaga tgctagcgca gcctgggagt ggggaggctg cggagacgat gtggacttcg 720
gggatgagaa gtcaagactc tttatggatg cgcagcacia gcggggccgt ggagatatcc 780
gtgcattggt gcaactgcac aacaacgagg cgggcaggct ggcgggtgcg agtcacacgc 840
gcaccgagtg taagtgccat gggctttcgg gttcctgcgc tctgcgcacc tgctggcaga 900
agctgcctcc gttccgcgag gtgggagcac ggctgctgga gcgcttcac ggcgcctcgc 960
gcgtcatggg caccaacgac ggcaaagctc tgctgcctgc ggtccgcaca ctcaagcctc 1020
ccggacgagc ggatctcctc tacgcagccg attcaccgga cttctgcgcc cccaaccggc 1080
gcacggggtc gccgggcacg cgcggacgcg cctgcaacag cagtgccccg gacctcagcg 1140
gctgcgacct gttgtgctgc ggtcgcgggc accgccagga gagcgtagag ctcgaggaga 1200
actgtctgtg ccgcttcac tgggtgctgc tgggtgcaatg ccaccgctgc cgggtgcgca 1260
aggaactcag cctgtgcctc tgacccgtcg cctgcctcgg aactgctggc agccacctct 1320
gggcatcta caggactatt agattccagc agggggcgct gtctgagtcc agcagctccc 1380
taggaaaagt acctatccag gccttgggaa attacagggg ccagccagga acttgggggtt 1440
tacaccagcc cacgaaagcc cgggggaaca taccctcca gcattcccct gaaaggccct 1500
ttgctagttc ctgcaggaga tcaactcccct tggcccccca gatggaaata agaaagccag 1560

Sequence Listings for CHM003.ST25

actctgccct ctggaataa tattcctcag aattactggg atggatgggt gagtttagta 1620
tcaataaaga catttaaadc cacaaaaaaa aaaaaaaaaa aaaaaaaaaa 1669

<210> 12
<211> 364
<212> PRT
<213> House Mouse

<400> 12

Met Leu Pro Pro Val Pro Ser Arg Leu Gly Leu Leu Leu Leu Leu Leu
1 5 10 15

Cys Pro Ala His Val Asp Gly Leu Trp Trp Ala Val Gly Ser Pro Leu
20 25 30

Val Met Asp Pro Thr Ser Ile Cys Arg Lys Ala Arg Arg Leu Ala Gly
35 40 45

Arg Gln Ala Glu Leu Cys Gln Ala Glu Pro Glu Val Val Ala Glu Leu
50 55 60

Ala Arg Gly Ala Arg Leu Gly Val Arg Glu Cys Gln Phe Gln Phe Arg
65 70 75 80

Phe Arg Arg Trp Asn Cys Ser Ser His Ser Lys Ala Phe Gly Arg Val
85 90 95

Leu Gln Gln Asp Ile Arg Glu Thr Ala Phe Val Phe Ala Ile Thr Ala
100 105 110

Ala Gly Ala Ser His Ala Val Thr Gln Ala Cys Ser Met Gly Glu Leu
115 120 125

Leu Gln Cys Gly Cys Gln Ala Pro Arg Gly Arg Ala Pro Pro Arg Pro
130 135 140

Ser Gly Leu Leu Gly Thr Pro Gly Pro Pro Gly Pro Thr Gly Ser Pro
145 150 155 160

Asp Ala Ser Ala Ala Trp Glu Trp Gly Gly Cys Gly Asp Asp Val Asp
165 170 175

Phe Gly Asp Glu Lys Ser Arg Leu Phe Met Asp Ala Gln His Lys Arg
180 185 190

Gly Arg Gly Asp Ile Arg Ala Leu Val Gln Leu His Asn Asn Glu Ala
195 200 205

Sequence Listings for CHM003.ST25

Gly Arg Leu Ala Val Arg Ser His Thr Arg Thr Glu Cys Lys Cys His
210 215 220

Gly Leu Ser Gly Ser Cys Ala Leu Arg Thr Cys Trp Gln Lys Leu Pro
225 230 235 240

Pro Phe Arg Glu Val Gly Ala Arg Leu Leu Glu Arg Phe His Gly Ala
245 250 255

Ser Arg Val Met Gly Thr Asn Asp Gly Lys Ala Leu Leu Pro Ala Val
260 265 270

Arg Thr Leu Lys Pro Pro Gly Arg Ala Asp Leu Leu Tyr Ala Ala Asp
275 280 285

Ser Pro Asp Phe Cys Ala Pro Asn Arg Arg Thr Gly Ser Pro Gly Thr
290 295 300

Arg Gly Arg Ala Cys Asn Ser Ser Ala Pro Asp Leu Ser Gly Cys Asp
305 310 315 320

Leu Leu Cys Cys Gly Arg Gly His Arg Gln Glu Ser Val Gln Leu Glu
325 330 335

Glu Asn Cys Leu Cys Arg Phe His Trp Cys Cys Val Val Gln Cys His
340 345 350

Arg Cys Arg Val Arg Lys Glu Leu Ser Leu Cys Leu
355 360

<210> 13
<211> 3154
<212> DNA
<213> House Mouse

<400> 13
cgcccgccctc ccgagccgaa gcgccggctg agcgtggtcc taccgcagct ccctggctcc 60
tgcccgcccc ctgcccaccc gcgcgtcccc tccggccgca gctgtctatg gcgcagcccc 120
cctccctgga tcatgcacag aaactttcga aagtggatct tttacgtgtt tctctgcttt 180
ggcgtcctct acgtgaagct cggagcattg tcatccgtgg tggccctggt agccaacatc 240
atctgcaaca agattcctgg cctggcccca cggcagcgtg ccatctgcca gagccgaccc 300
gatgccatca ttgtgatcgg ggagggggcg cagatgggca tcgacgagtg ccagcaccag 360
ttccgattcg gccgctggaa ctgctccgcc ctgggcgaga agaccgtctt cgggcaagaa 420
ctccgagtag ggagtcgaga ggctgccttc acctatgcca tcacggcggc gggcgtggcg 480

Sequence Listings for CHM003.ST25

catgctgtca ccgctgcctg cagccagggc aatctgagca attgtggctg tgaccgggag	540
aagcaaggct actacaacca ggcggaaggc tggaagtggg ggggctgctc agcggacgtc	600
cgctacggca tcgacttttc tcgtcgcttt gtggatgccc gtgagatcaa aaagaacgcc	660
aggcgcctca tgaaccttca caacaatgag gcgggcagaa aggttctgga ggaccgcatg	720
aagctggaat gtaagtgtca cgggtgtgtca ggctcctgta ccacaaaac ttgctggacc	780
acgctaccta agttccgcga ggtgggccac ctgctcaagg agaagtacaa cgcagcgggtg	840
cagggtggagg tgggtgcgagc cagccgcctg cgccagccca ccttcctgcg catcaagcag	900
ctacgcagct accagaagcc tatggagacg gacctggtgt acatcgagaa gtcgcccac	960
tactgcgagg aggacgcggc cacgggcagc gtgggcacgc agggccgtct gtgcaaccgc	1020
acctcgcggg gggccgacgg ctgtgacacc atgtgctgcg gccgcggcta caacacgcac	1080
cagtacacca aggtgtggca gtgtaactgc aaattccact ggtgttgctt cgtcaagtgc	1140
aacacgtgca gcgagcgcac cgaggtcttc acctgcaagt gaggctcccg cgcaggcgcg	1200
ctcggcccct gccgaccctg cggccctcgc cattattttg cacatccttc tttgcttctg	1260
gagctgccag ctgcaggcac aggaggggtg ggatagaggt ggggagctcg agatactcca	1320
ggctccttcc tactcgctct gtccccgccc agcatccaag gtcaacgcaa tgggtggtctg	1380
gtaccaatg gagacaaatc cctttacttc tctttgggaa agtgaaccac aaagggacca	1440
tgagactctg agggtcacct ccctgcctgt gactggacac agaaaggcca caccaccag	1500
tcacactcaa aacggtttcc tgggctgttt cctgccggcc ctgggcagtg tggatggatg	1560
ttgacaaaat tatttatgtt ttcttagcat cagatgagga ctcagtacta acgactgggt	1620
agccagacct aaccctattt gaggacaccc ttccctcact cctcccggcc cctccctgca	1680
gggtcctctg ctcttgcag aactcgagga tgtcagaatt ggcacggaag ctggctggtg	1740
gggggactcc ttatcagcac cttgggaggg gcttggtggc cctacaaggc ctgagatggc	1800
cgcagaggac agccaatctt ccattccatt tggagactgt catgcaaatc aaatgtccct	1860
tgtgtcaggc tccaggcatg cctcgtcctc tccctggtcc ttcaccctcc cagcctgctg	1920
ccaacctcca cctccagttt acaaattctc ttctcctctg gagccaacct gacaccagg	1980
actgccccac aggttcagga gaggtcaggg acagttgccc cacatgacag atggacagag	2040
ggcaatctga agatttactg gagacccac ggctctgtga aataaatata ctgacacagc	2100
cccatccagc ccaactctgg aagttgccag ggtgatggga ggctgcaccc ccttttcagt	2160
accttgggtt ttgtccttct tctgtgatcc tgatgccaga gaactgacat ccagaattta	2220
gggatgtatt ggtcaggccc cctgcctagt gtccactgat acctgcttca gggtccttat	2280
attatgagga catgggaccc tcaaacaggg gtccgtggga agcttaatgt cccatttcct	2340
caggcccttc cagatgggga cagaagaact caggcctggg catatcccac cctttcctcc	2400

Sequence Listings for CHM003.ST25

```

acaacacatg gcagggtaag aaactgccag ggctgataat acaactgccc acagcctacc 2460
ccacactaag gtgtttcata gcagaagtcc atggaaatgt ggggtttggt ggccaccaag 2520
ccaggtggcc tggacattga cctggggaag gtgacccttg tttgcccttg ccttgcattcc 2580
agctgtgtgt ccctatcatg tcaggatggt ccaagcctct gggccactgg aaatgtccca 2640
ccctgatcct ggccccatct cctcacccca agtcctggga taccacgctc cgtcgcccag 2700
tgtcccctgt gaggagcctg gttaacttat attgttatat agcgtcccct gtctgtcatg 2760
tctcttaagt tattgtgacc tacactgggt accggagggg atgggggatg gcttcagctg 2820
ctgtcccca agccaggctc ctccttctgc ttgaaacaga ccctcggggg cccctgatgc 2880
caccgaggca attcgactg tccctgggct gccaggcacc tgcgcctgca ctcggtcagc 2940
cgcagacctt gccttggggg agagaggtgg ttagtggacc caggcagggc actggctgtc 3000
ccaatgctgt gtgctggggg ggaggtggcc gggcaccaca tgccttgaa gtgccctact 3060
tctgatgggc tgtgttcctg cctcctctgg aggggagcac ttagcccaa taaaagctgg 3120
aatcagaaaa aaaaaaaaaa aaaaaaaaaa aaaa 3154

```

```

<210> 14
<211> 349
<212> PRT
<213> House Mouse

```

```

<400> 14

```

```

Met His Arg Asn Phe Arg Lys Trp Ile Phe Tyr Val Phe Leu Cys Phe
1          5          10          15

```

```

Gly Val Leu Tyr Val Lys Leu Gly Ala Leu Ser Ser Val Val Ala Leu
20          25          30

```

```

Val Ala Asn Ile Ile Cys Asn Lys Ile Pro Gly Leu Ala Pro Arg Gln
35          40          45

```

```

Arg Ala Ile Cys Gln Ser Arg Pro Asp Ala Ile Ile Val Ile Gly Glu
50          55          60

```

```

Gly Ala Gln Met Gly Ile Asp Glu Cys Gln His Gln Phe Arg Phe Gly
65          70          75          80

```

```

Arg Trp Asn Cys Ser Ala Leu Gly Glu Lys Thr Val Phe Gly Gln Glu
85          90          95

```

```

Leu Arg Val Gly Ser Arg Glu Ala Ala Phe Thr Tyr Ala Ile Thr Ala
100          105          110

```

Sequence Listings for CHM003.ST25

Ala Gly Val Ala His Ala Val Thr Ala Ala Cys Ser Gln Gly Asn Leu
115 120 125

Ser Asn Cys Gly Cys Asp Arg Glu Lys Gln Gly Tyr Tyr Asn Gln Ala
130 135 140

Glu Gly Trp Lys Trp Gly Gly Cys Ser Ala Asp Val Arg Tyr Gly Ile
145 150 155 160

Asp Phe Ser Arg Arg Phe Val Asp Ala Arg Glu Ile Lys Lys Asn Ala
165 170 175

Arg Arg Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg Lys Val Leu
180 185 190

Glu Asp Arg Met Lys Leu Glu Cys Lys Cys His Gly Val Ser Gly Ser
195 200 205

Cys Thr Thr Lys Thr Cys Trp Thr Thr Leu Pro Lys Phe Arg Glu Val
210 215 220

Gly His Leu Leu Lys Gly Lys Tyr Asn Ala Ala Val Gln Val Glu Val
225 230 235 240

Val Arg Ala Ser Arg Leu Arg Gln Pro Thr Phe Leu Arg Ile Lys Gln
245 250 255

Leu Arg Ser Tyr Gln Lys Pro Met Glu Thr Asp Leu Val Tyr Ile Glu
260 265 270

Lys Ser Pro Asn Tyr Cys Glu Glu Asp Ala Ala Thr Gly Ser Val Gly
275 280 285

Thr Gln Gly Arg Leu Cys Asn Arg Thr Ser Pro Gly Ala Asp Gly Cys
290 295 300

Asp Thr Met Cys Cys Gly Arg Gly Tyr Asn Thr His Gln Tyr Thr Lys
305 310 315 320

Val Trp Gln Cys Asn Cys Lys Phe His Trp Cys Cys Phe Val Lys Cys
325 330 335

Asn Thr Cys Ser Glu Arg Thr Glu Val Phe Thr Cys Lys
340 345